

LEC 15

CSE 121

Array Patterns / Putting It All Together

Questions during Class?

Raise hand or send here

sli.do **#cse121**

BEFORE WE START

Talk to your neighbors:

*What's left on your 2024-25
academic year bucket list?*

Music: ♣ [CSE 121 25su Lecture Tunes](#) ♣

Instructor: Hannah Swoffer

TAs: Abby Merav
 Hannah Trey
 Julia

Agenda

- **Announcements, Reminders, Final Exam Logistics** ←
- PCM Review
- Code Example(s)!



Announcements, Reminders

- R6 released, due Tuesday, August 19th
 - Eligible: **C2**, P2, C3
- P3 released, due *Wednesday, August 20th*
 - Note: you will get feedback *after* R7 & extra resub is due
- Note: all assignments will be eligible for resubmission in R7!
 - R7 due Thursday, August 21st
 - Extra PSW resub due Friday, August 22nd *at 5:00 PM*
- Details about the [PSW → Extra Resub posted on Ed!](#)
- Final exam on **Friday, August 22nd from 12:00-1:00 PM** during lecture
 - Wednesday's class will be TA-led final exam review
- Gumball meetup on Wednesday, August 20th from 2:30-4:00 PM near Drumheller fountain!



Evaluations and Awards

Please give us feedback!

- [Course Eval](#)s are due **Friday, August 22nd at 11:59 PM**

[Bob Bandes TA award](#) nominations open!

- thought your TA was the goat? write them a nomination!
- fun fact: some of our faculty won the award when *they* were TAs!



The “Core” of the Final Exam

- In-person, without assigned seating
- Same general logistics as quizzes:
 - On paper
 - We will provide you with one reference sheet, and
 - You may bring one double-sided 8.5 x 11-inch page of notes
- Will have 6 problems, all similar in style to the quizzes
- Focus is on behavior (not code style); minor syntax errors allowed (when unambiguous)
- *A bit* less time per-problem than on a quiz, but the problems are shorter



121's "Exam Review Systems"

- Next week is focused on final exam review and prep
 - next Wed lecture: some strategies & live practice on paper
 - make sure to bring a pencil or pen!
 - next Thu quiz section: *even more* practice
- Several async resources, including:
 - previous quizzes and practice quizzes (very helpful!)
 - many existing section problems
 - multiple previous actual finals on the course website
 - disclaimer: much longer than our final; might look significantly different



Some Miscellaneous Exam Thoughts

- Be very careful about how you use the previous actual finals and practice quizzes
 - Great study resource, but...
 - Hard to “unsee” solutions after looking
 - Use for targeted study, mimic the actual test-taking environment
- Make your own cheatsheet, don't use someone else's!
 - Making the cheatsheet *is* studying
- It is your responsibility to know the policies & procedures
 - Let's take a quick spin of the website page right now :)



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- **PCM Review** ←
- Code Example(s)!



(PCM) Why Discuss Array Patterns?

- Arrays are important! This is our fourth lecture covering arrays
- Analogy: tools in toolbox
- Helpful for your future in programming



(PCM) Counting Elements that Meet a Condition

"one"	"two"	"three"	"six"	"seven"	"eight"	"ten"
-------	-------	---------	-------	---------	---------	-------

```
public static int evenLength(String[] list) {  
    int countEven = 0;  
    for (int i = 0; i < list.length; i++) {  
        if (  
            countEven++;  
        }  
    }  
  
    return countEven;  
}
```



(PCM) Modifying Elements of an Array

4	8	15	16	23	42
---	---	----	----	----	----

```
public static void clamp(int min, int max, int[] list) {  
    for (int i = 0; i < list.length; i++) {  
        if (                > max) {  
            = max;  
        } else if (                < min) {  
            = min;  
        }  
    }  
}
```



(PCM) Searching for an Element

"one"	"two"	"three"	"six"	"seven"	"eight"	"ten"
-------	-------	---------	-------	---------	---------	-------

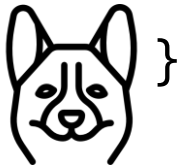
```
public static int indexOfIgnoreCase(String phrase, String[] list) {  
    for (int i = 0; i < list.length; i++) {  
        if (                ) {  
            return i;  
        }  
    }  
  
    return -1;  
}
```



(PCM) Array of Counters

0	1	2	2	0	2
---	---	---	---	---	---

```
public static int[] numCount(Scanner input, int numPrompts) {  
    int[] counts =  
        ;  
    for (int i = 0; i < numPrompts; i++) {  
        int num = input.nextInt();  
  
        ;  
    }  
  
    return counts;  
}
```



(PCM) Analyzing Multiple Elements in an Array (isPalindrome)

0	1	9	1	0
---	---	---	---	---

```
public static boolean isPalindrome(int[] list) {  
    for (int i = 0; i < list.length / 2; i++) {  
        if (list[i] != list[list.length - 1 - i]) {  
            return ;  
        }  
    }  
  
    return ;  
}
```



(PCM) Shifting Elements

9.6	-88.0	4.815	0.009	7.0184	42.9
-----	-------	-------	-------	--------	------

```
public static void rotateRight(double[] list) {  
    double lastElement = list[list.length - 1];  
  
    for (int i = list.length - 1; i > 0; i--) {  
        list[i] = list[i - 1];  
    }
```

;



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